I claim:

1. An illuminating light comprising:

a connection knob for establishing mechanical and electrical connection to a light socket,

a casing connected to said casing,

a secondary heat sink having a proximal and distal side,

at least one semiconductor light source mounted to said secondary heat sink distal side,

said semiconductor light source including a semiconductor chip mounted to a primary heat sink,

said primary heat sink being mounted to said secondary heat sink,

a heat sink grid located on said secondary heat sink proximal side,

a heat conduction path from said semiconductor chip through said primary heat sink, through said secondary heat sink, to said heat sink grid, and thence to the atmosphere,

said heat sink grid permitting air contact with its surface area in order to dissipate heat to air which contacts it, and

a cover covering said semiconductor light sources.

2. A device as recited in claim 1 further comprising:

a coating on said chip for converting light emitted by said chip to white light.

3. A device as recited in claim 1 further comprising:

a circuit board located within said casing for providing electrical control of the illuminating light.

4. A device as recited in claim 1 wherein said semiconductor light source includes:

a well,

said chip being mounted in said well,

and said coating at least partially filling said well.

5. A device as recited in claim 2 wherein said semiconductor light source includes:

a primary well,

a plurality of sub-wells located in said primary wells,

a plurality of light emitting semiconductor chips located in said sub-wells.

6. A device as recited in claim 5 wherein said coating fills said sub-wells and wherein said coating at least partially fills said sub-wells.

7. A device as recited in claim 1 further comprising a quantity of heat-conductive adhesive that secures said primary heat sink to said secondary heat sink.

8. A device as recited in claim 1 further comprising a quantity of light-reflective adhesive that secures said chip to said primary heat sink.

9. A device as recited in claim 1 further comprising a dome over said primary heat sink, said dome serving to focus light emitted by said chip and direct it in an arc of a circle defined by Θ.

10. A device as recited in claim 1 wherein said primary heat sink has a smaller interior volume than said secondary heat sink.

11. A device as recited in claim 1 wherein said heat sink grid provides for airflow therethrough in order to achieve efficient heat dissipation.

12. An illuminating light comprising:

a semiconductor light source capable of emitting light when electrically powered,

a secondary heat sink having a proximal and distal side,

said semiconductor light source being mounted to said secondary heat sink,

said semiconductor light source including a semiconductor chip mounted to a primary heat sink,

said primary heat sink being mounted to said secondary heat sink,

a heat sink grid located on said secondary heat sink proximal side,

a heat conduction path from said semiconductor chip through said primary heat sink, through said secondary heat sink, to said heat sink grid, and thence to the atmosphere, and

said heat sink grid permitting air contact with its surface area in order to dissipate heat to air which contacts it.

13. A device as recited in claim 12 wherein said semiconductor light source includes a semiconductor chip that emits generally monochromatic light and a coating on said chip to convert light emitted by said chip to white light.

14. A device as recited in claim 13 wherein said semiconductor light source includes:

a well in said primary heat sink,

said chip being mounted in said well, and

and said coating at least partially filling said well.

15. A device as recited in claim 13 wherein said semiconductor light source includes:

a primary well,

a plurality of sub-wells located in said primary wells,

a plurality of light emitting semiconductor chips located in said sub-wells.

16. A device as recited in claim 15 wherein said coating fills said sub-wells and wherein said coating at least partially fills said sub-wells.

17. A device as recited in claim 13 further comprising a quantity of heat-conductive adhesive that secures said primary heat sink to said secondary heat sink.

18. A device as recited in claim 13 further comprising a quantity of light-reflective adhesive that secures said chip to said primary heat sink.

19. A device as recited in claim 13 further comprising a dome over said primary heat sink, said dome serving to focus light emitted by said chip and direct it in an arc of a circle defined by Θ.

20. A device as recited in claim 13 wherein said primary heat sink has a smaller interior volume than said secondary heat sink.

21. A device as recited in claim 13 wherein said heat sink grid provides for airflow therethrough in order to achieve efficient heat dissipation.

22. An illuminating light comprising:

a heat sink having a proximal and a distal side,

at least one semiconductor light source mounted to said heat sink distal side,

said semiconductor light source being in heat conductance with said heat sink,

a heat sink grid located on said heat sink proximal side,

said heat sink grid having a physical configuration that provides substantial surface area for transferring heat to air that passes said heat sink grid, and

a coating for converting light emitted by said semiconductor light source to white light for use in illuminating a physical space used by humans.

23. An illuminating light comprising:

a heat sink having at least two sides,

at least one semiconductor light source mounted to said heat sink and being in heat conductive arrangement therewith,

a heat sink grid located on said heat sink,

said heat sink grid and said semiconductor light source being located on different sides of said heat sink from each other,

said heat sink grid having a physical configuration that provides a non-planar surface area in contact with the atmosphere surrounding the illuminating light for transferring heat from said heat sink grid to air that passes said heat sink grid, and

a coating for converting light emitted by said semiconductor light source to white light for use in illuminating a physical space used by humans.